

# **Oil Sample Analysis Report**

**U. S. EPA Region V  
Case Number E14539**

**Marine Safety Laboratory  
Case Number 14-209**



U.S. Department of  
Homeland Security

United States  
Coast Guard



Manager  
U.S. Coast Guard  
Marine Safety Laboratory

1 Chelsea Street  
New London, CT 06320  
Phone: (860) 271-2704  
Fax: (860) 271-2641

16450  
29 Aug 2014

U. S. Environmental Protection Agency  
Attn: On-Scene Coordinator  
9311 Groh Road  
Mail Code: SEGI  
Grosse Ile, MI 481381697

Dear On-Scene Coordinator:

The laboratory analysis of this case has been completed and our report is forwarded. The technical data supporting the report (spectrograms and chromatograms) have been archived at our facility and are available upon request. We will maintain the oil samples in refrigerated storage pending final case disposition.

Questions concerning this report or the analytical methods used should be directed to the Supervisor of Analysis, Kristy Juare.

  
K. JUAIRE

Encl: (1) MSL Report 14-209

**United States Coast Guard  
Marine Safety Laboratory  
Oil Sample Analysis Report  
14-209**

**Requestor:** U. S. EPA Region V

**Unit Case/Activity Number:** E14539

**Received:** 26-Aug-14

**Via:** Federal Express 8060 9116 3024

**Number Of Samples:** 8

**Lab NO. of Spills:** 1, 3, and 4

**Lab NO. of Suspects:** 5

**Lab NO. of Background:** 2, 6, 7, and 8

**Analysis Methods:**

- ☒ GAS CHROMATOGRAPHY (GC)
- ☒ GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS)
- ☐ INFRARED SPECTROSCOPY (IR)

**Laboratory's Conclusion (as explained below): MATCH**

**RESULTS:**

1. Samples 14-209-1, 3, and 4 were specified to be representative of spilled oil. Analysis indicates:
  - A. Samples 14-209-3 and 4 are similar to each other and contain degraded fuel oil hydrocarbons mixed with lubricating oil. Non-petroleum contamination is present in both samples. Differences observed between samples 14-209-3 and 4 are attributable to weathering and non-petroleum contamination.
  - B. Sample 14-209-1 does not contain a quantity of petroleum oil detectable by the analysis conducted.
2. Suspected source sample 14-209-5 contains a mixture of fuel oil hydrocarbons and lubricating oil with characteristics similar to those of spill samples 14-209-3 and 4. Differences are attributable to weathering and non-petroleum contamination.
3. Samples 14-209-2, 6, 7, and 8 were specified to represent background samples. No petroleum oil was detected.

**CONCLUSIONS:**

1. Samples 14-209-3 and 4 represent different portions of the same spilled oil.
2. Suspected source sample 14-209-5 and spill samples 14-209-3 and 4 are derived from a common source of petroleum oil.
3. Samples 14-209-1, 2, 6, 7, and 8 do not contain a quantity of petroleum oil detectable by the analysis conducted.

**SUPERVISOR OF ANALYSIS**

K. JUAIRE



**DATE** 29-Aug-14

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**United States Coast Guard  
Marine Safety Laboratory**

**Oil Spill Identification Analysis  
Cost Recovery Documentation**

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**Laboratory Case Number:** 14-209  
**Requestor:** U. S. EPA Region V  
**Unit Case Number:** E14539  
**Number of Samples:** 9  
**Cost Per Sample Prepared:** \$20.00  
**Total Costs of Sample Preparation:** \$180.00  
**Number of Analyses:** 20  
**Cost Per Sample Analyzed:** \$86.00  
**Total Costs for Analysis:** \$1,720.00  
**TOTAL COSTS:** \$1,900.00

This documentation is provided for purposes of Phase IV - Documentation and  
Cost Recovery under the National Oil and Hazardous Substances Pollution  
Contingency Plan (40 CFR Part 300)

**Signature:** \_\_\_\_\_



**Date:** 29 Aug 2014



**United States Coast Guard  
Marine Safety Laboratory Sample  
Check-In Log**

**MSL Case/Activity Number: 14-209**

**Requestor:** U. S. EPA Region V

**Unit Case Number** E14539

**Federal Project Number:** E14539

**Delivery Method:** Federal Express

**Received Date:** 26 Aug 14

**Delivery Number:** 8060 9116 3024

**Priority:** No

**Rush:** Yes

**Comparison** No

Lab Number 14-209	Sample Descriptions from Sample Jars	Spill	Source
1	OO-FP-001-082214 SAMPLES COLLECTED AT WATER'S SURFACE INSIDE OF BOOM WITH SHEEN 8/22/14 1801	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	OO-FP-002-082214 WATER COLLECTED FROM DRAINAGE PIPE DISCHARGING DIRECTLY TO THE CANAL 8/22/14 1805	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	OO-FP-003-082214 OIL / WATER MIXTURE COLLECTED FROM GRAVEL BETWEEN RETENTION BASIN AND SHEET PILING 8/22/14 1812	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	OO-FP-004-082214 OIL / WATER MIXTURE COLLECTED FROM TOP OF RETENTION BASIN (WEATHERED) 8/22/14 1817	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	OO-FP-005-082214 OIL / WATER MIXTURE COLLECTED FROM LEADING EDGE OF NEW / BLACK OIL ENTERING THE RETENTION BASIN 8/22/14 1822	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6	OO-FP-007-082214 WATER COLLECTED FROM DRAINAGE DITCH ADJACENT TO THE AREA OF RELEASE 8/22/14 1830	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7	O-FP-008-082214 UPSTREAM SAMPLE COLLECTED IN THE CANAL, APPROXIMATELY 60 YARDS UPSTREAM OF RELEASE 8/22/14 1857	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8	OO-FP-009-082214 RAINWATER / GROUNDWATER RUNOFF COLLECTED ADJACENT TO 5000 W 41ST. STREET 8/22/14 1842	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>
10		<input type="checkbox"/>	<input type="checkbox"/>
<b>Remarks:</b> Samples 2, 6, 7, and 8 designated as "Spill" for comparison purposes only.			

**Samples checked in by:** MST2 BRIAN MESSING

**Date:** 26 Aug 14

**Sample Custodian:** MST1 ALEXANDER SHUNDA

**Date:** 27 Aug 14

**Supervisor of Analysis:** K. JUAIRE

**Date:** 28 Aug 14

# **Oil Sample Analysis Report**

**U. S. EPA Region V  
Case Number E14539**

**Marine Safety Laboratory  
Case Number 14-211**



U.S. Department of  
Homeland Security

United States  
Coast Guard



Manager  
U.S. Coast Guard  
Marine Safety Laboratory

1 Chelsea Street  
New London, CT 06320  
Phone: (860) 271-2704  
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16450

03 Sep 2014

U. S. Environmental Protection Agency  
Attn: On-Scene Coordinator  
9311 Groh Road  
Mail Code: SEGI  
Grosse Ile, MI 481381697

Dear On-Scene Coordinator:

The laboratory analysis of this case has been completed and our report is forwarded. The technical data supporting the report (spectrograms and chromatograms) have been archived at our facility and are available upon request. We will maintain the oil samples in refrigerated storage pending final case disposition.

Questions concerning this report or the analytical methods used should be directed to the Supervisor of Analysis, Kristy Juairé.

  
K. JUAIRE

Encl: (1) MSL Report 14-211



**United States Coast Guard  
Marine Safety Laboratory  
Oil Sample Analysis Report  
14-211**

**Requestor:** U. S. EPA Region V

**Unit Case/Activity Number:** E14539

**Received:** 28-Aug-14      **Via:** Federal Express      8060 9116 3013

**Number Of Samples:** 3

**Lab NO. of Spills:** 1, 2, and 3

**Lab NO. of Suspects:** n/a

**Lab NO. of Background:** n/a

**Analysis Methods:**

- ☒ GAS CHROMATOGRAPHY (GC)
- ☒ GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS)
- ☐ INFRARED SPECTROSCOPY (IR)

**Laboratory's Conclusion (as explained below): INCONCLUSIVE**

**SPECIAL INSTRUCTIONS:** Compare to MSL Case 14-209. Samples 14-209-3, 4, and 5 were reanalyzed as representative samples.

**RESULTS:**

1. Samples 14-211-1, 2, and 3 were specified to be representative of spilled oil. Analysis indicates:
  - A. Sample 14-211-1 contains degraded fuel oil hydrocarbons mixed with lubricating oil. Non-petroleum contamination is present.
  - B. Sample 14-211-2 contains petroleum biomarkers. The quantity is not sufficient for product identification or comparison purposes based on the analysis conducted.
  - C. Sample 14-211-3 contains lubricating oil. The quantity is not sufficient for comparison purposes based on the analysis conducted.
2. Samples 14-209-3, 4, and 5 contain mixtures of degraded fuel oil hydrocarbons and lubricating oil with characteristics somewhat similar to those of spill sample 14-211-1. Important similarities strongly suggest these samples are related to each other through a common source of petroleum oil. However, sample 14-211-1 contains a lower relative proportion of fuel oil to lubricating oil than is present in samples 14-209-3, 4, and 5, and this difference is not attributable to weathering or non-petroleum contamination. It is not possible based on the analysis conducted to conclusively determine if the proportional difference noted is the result of a non-homogeneous source.

**CONCLUSIONS:**

1. Comparison of spill sample 14-211-1 to samples 14-209-3, 4, and 5 is inconclusive for reasons stated above.
2. Samples 14-211-2 and 3 do not contain a quantity of petroleum oil sufficient for correlation analysis.

**SUPERVISOR OF ANALYSIS**

K. JUAIRE

**DATE** 03-Sep-14



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**United States Coast Guard  
Marine Safety Laboratory**

**Oil Spill Identification Analysis  
Cost Recovery Documentation**

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**Laboratory Case Number:** 14-211  
**Requestor:** U. S. EPA Region V  
**Unit Case Number:** E14539  
**Number of Samples:** 5  
**Cost Per Sample Prepared:** \$20.00  
**Total Costs of Sample Preparation:** \$100.00  
**Number of Analyses:** 18  
**Cost Per Sample Analyzed:** \$86.00  
**Total Costs for Analysis:** \$1,548.00  
**TOTAL COSTS:** \$1,648.00

This documentation is provided for purposes of Phase IV - Documentation and  
Cost Recovery under the National Oil and Hazardous Substances Pollution  
Contingency Plan (40 CFR Part 300)

**Signature:** \_\_\_\_\_



**Date:** 03 Sep 2014

**United States Coast Guard  
Marine Safety Laboratory Sample  
Check-In Log**

**MSL Case/Activity Number: 14-211**

**Requestor:** U. S. EPA Region V

**Unit Case Number** E14539

**Federal Project Number:** E14539

**Delivery Method:** Federal Express

**Received Date:** 28 Aug 14

**Delivery Number:** 8060 9116 3013

**Priority:** No

**Rush:** Yes

**Comparison** Yes

Lab Number 14-211	Sample Descriptions from Sample Jars	Spill	Source
1	OO-FP-006-082514 OIL LOCATED BENEATH PIPING RUNS TO CONTAINMENT 8/25/14 1525	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	OO-FP-011-082514 WATER CONTAINING SHEEN ADJACENT TO STORM SEWER 8/25/14 1535	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	OO-FP-010-082514 OIL SHEEN ON H2O W/IN CONTAINMENT ON BARGE DOC 8/25/14 1515	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4		<input type="checkbox"/>	<input type="checkbox"/>
5		<input type="checkbox"/>	<input type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>
10		<input type="checkbox"/>	<input type="checkbox"/>

**Remarks:** Compare to 14-209. Sample descriptions taken from CoC. "Spill" designations taken from CoC.

**Samples checked in by:** YN3 JAMIE YINGLING *Jamie Yingling YN3* **Date:** 28 Aug 14

**Sample Custodian:** MSTI ALEXANDER SHUNDA *AS* **Date:** 28 Aug 14

**Supervisor of Analysis:** K. JUAIRE *K. Juare* **Date:** 02 Sep 14

**United States Coast Guard  
Marine Safety Laboratory Sample  
Check-In Log**

**MSL Case/Activity Number: 14-209**

**Requestor:** U. S. EPA Region V

**Unit Case Number** E14539

**Federal Project Number:** E14539

**Delivery Method:** Federal Express

**Received Date:** 26 Aug 14

**Delivery Number:** 8060 9116 3024

**Priority:** No

**Rush:** Yes

**Comparison** No

Lab Number 14-209	Sample Descriptions from Sample Jars	Spill	Source
1	OO-FP-001-082214 SAMPLES COLLECTED AT WATER'S SURFACE INSIDE OF BOOM WITH SHEEN 8/22/14 1801	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	OO-FP-002-082214 WATER COLLECTED FROM DRAINAGE PIPE DISCHARGING DIRECTLY TO THE CANAL 8/22/14 1805	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	OO-FP-003-082214 OIL / WATER MIXTURE COLLECTED FROM GRAVEL BETWEEN RETENTION BASIN AND SHEET PILING 8/22/14 1812	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	OO-FP-004-082214 OIL / WATER MIXTURE COLLECTED FROM TOP OF RETENTION BASIN (WEATHERED) 8/22/14 1817	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	OO-FP-005-082214 OIL / WATER MIXTURE COLLECTED FROM LEADING EDGE OF NEW / BLACK OIL ENTERING THE RETENTION BASIN 8/22/14 1822	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6	OO-FP-007-082214 WATER COLLECTED FROM DRAINAGE DITCH ADJACENT TO THE AREA OF RELEASE 8/22/14 1830	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7	O-FP-008-082214 UPSTREAM SAMPLE COLLECTED IN THE CANAL, APPROXIMATELY 60 YARDS UPSTREAM OF RELEASE 8/22/14 1857	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8	OO-FP-009-082214 RAINWATER / GROUNDWATER RUNOFF COLLECTED ADJACENT TO 5000 W 41ST. STREET 8/22/14 1842	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>
10		<input type="checkbox"/>	<input type="checkbox"/>
<b>Remarks:</b> Samples 2, 6, 7, and 8 designated as "Spill" for comparison purposes only.			

**Samples checked in by:** MST2 BRIAN MESSING

**Date:** 26 Aug 14

**Sample Custodian:** MST1 ALEXANDER SHUNDA

**Date:** 27 Aug 14

**Supervisor of Analysis:** K. JUAIRE

**Date:** 28 Aug 14

# **Oil Sample Analysis Report**

**U. S. EPA Region V  
Case Number E14539**

**Marine Safety Laboratory  
Case Number 14-218**





U.S. Department of  
Homeland Security

United States  
Coast Guard



Manager  
U.S. Coast Guard  
Marine Safety Laboratory

1 Chelsea Street  
New London, CT 06320  
Phone: (860) 271-2704  
Fax: (860) 271-2641

16450  
24 Sep 2014

U. S. Environmental Protection Agency  
Attn: On-Scene Coordinator  
9311 Groh Road  
Mail Code: SEGI  
Grosse Ile, MI 481381697

Dear On-Scene Coordinator:

The laboratory analysis of this case has been completed and our report is forwarded. The technical data supporting the report (spectrograms and chromatograms) have been archived at our facility and are available upon request. We will maintain the oil samples in refrigerated storage pending final case disposition.

Questions concerning this report or the analytical methods used should be directed to the Supervisor of Analysis, Kristy Juaire.

  
K. JUAIRE

Encl: (1) MSL Report 14-218

**United States Coast Guard  
Marine Safety Laboratory  
Oil Sample Analysis Report  
14-218**

**Requestor:** U. S. EPA Region V

**Unit Case/Activity Number:** E14539

**Received:** 16-Sep-14

**Via:** Federal Express 8060 9116 2944

**Number Of Samples:** 2

**Lab NO. of Spills:** 1 and 2

**Lab NO. of Suspects:** n/a

**Lab NO. of Background:** n/a

**Analysis Methods:**

- ☒ GAS CHROMATOGRAPHY (GC)
- ☒ GAS CHROMATOGRAPHY-MASS SPECTROMETRY (GC-MS)
- ☐ INFRARED SPECTROSCOPY (IR)

**Laboratory's Conclusion (as explained below): NON-MATCH**

SPECIAL INSTRUCTIONS: Compare to MSL Case 14-209. Samples 14-209-4 and 5 were reanalyzed as representative samples for comparison purposes.

**RESULTS:**

1. Samples 14-218-1 and 2 were specified to be representative of spilled oil. Analysis indicates:
  - A. Sample 14-218-2 contains lubricating oil. Non-petroleum contamination is present.
  - B. Sample 14-218-1 contains lubricating oil with overall characteristics somewhat similar to those of spill sample 14-218-2. This sample does not contain a quantity of petroleum oil sufficient for conclusive comparison purposes based on the analysis conducted.
2. Samples 14-209-4 and 5 contain degraded fuel oil hydrocarbons mixed with lubricating oil with characteristics different from those of spill sample 14-218-2. Differences are not attributable to weathering or non-petroleum contamination.

**CONCLUSIONS:**

1. Samples 14-209-4 and 5 and sample 14-218-2 are not derived from a common source of petroleum oil.
2. Sample 14-218-1 does not contain a quantity of petroleum oil sufficient for correlation analysis.

**SUPERVISOR OF ANALYSIS**

K. JUAIRE



**DATE**

24-Sep-14

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**United States Coast Guard  
Marine Safety Laboratory**

**Oil Spill Identification Analysis  
Cost Recovery Documentation**

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**Laboratory Case Number:** 14-218  
**Requestor:** U. S. EPA Region V  
**Unit Case Number:** E14539  
**Number of Samples:** 4  
**Cost Per Sample Prepared:** \$20.00  
**Total Costs of Sample Preparation:** \$80.00  
**Number of Analyses:** 14  
**Cost Per Sample Analyzed:** \$86.00  
**Total Costs for Analysis:** \$1,204.00  
**TOTAL COSTS:** \$1,284.00

This documentation is provided for purposes of Phase IV - Documentation and  
Cost Recovery under the National Oil and Hazardous Substances Pollution  
Contingency Plan (40 CFR Part 300)

**Signature:** \_\_\_\_\_



**Date:** 24 Sep 2014

**United States Coast Guard  
Marine Safety Laboratory Sample  
Check-In Log**

**MSL Case/Activity Number: 14-218**

**Requestor:** U. S. EPA Region V

**Unit Case Number** E14539

**Federal Project Number:** E14539

**Delivery Method:** Federal Express

**Received Date:** 16 Sep 14

**Delivery Number:** 8060 9116 2944

**Priority:** No

**Rush:** Yes

**Comparison** Yes

Lab Number 14-218	Sample Descriptions from Sample Jars	Spill	Source
1	OO-FP-012-091114 OIL SHEEN NET USED TO COLLECT OIL SHEEN ON WATER'S SURFACE INSIDE OF BOOM 9/11/14 0757	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	OO-FP-012-091114-D OIL SHEEN NET USED TO COLLECT A DUPLICATE SAMPLE OF OIL SHEEN ON WATER'S SURFACE INSIDE OF BOOM 9/11/14 0757	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3		<input type="checkbox"/>	<input type="checkbox"/>
4		<input type="checkbox"/>	<input type="checkbox"/>
5		<input type="checkbox"/>	<input type="checkbox"/>
6		<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>
10		<input type="checkbox"/>	<input type="checkbox"/>

**Remarks:** Compare to 14-209. "Spill" designation taken from CoC. Descriptions taken from CoC.

**Samples checked in by:** YN3 JAMIE YINGLING

**Date:** 16 Sep 14

**Sample Custodian:** MST1 ALEXANDER SHUNDA

**Date:** 24 Sep 14

**Supervisor of Analysis:** K. JUAIRE

**Date:** 24 Sep 14



**United States Coast Guard  
Marine Safety Laboratory Sample  
Check-In Log**

**MSL Case/Activity Number: 14-209**

**Requestor:** U. S. EPA Region V

**Unit Case Number** E14539

**Federal Project Number:** E14539

**Delivery Method:** Federal Express

**Received Date:** 26 Aug 14

**Delivery Number:** 8060 9116 3024

**Priority:** No

**Rush:** Yes

**Comparison:** No

Lab Number 14-209	Sample Descriptions from Sample Jars	Spill	Source
1	OO-FP-001-082214 SAMPLES COLLECTED AT WATER'S SURFACE INSIDE OF BOOM WITH SHEEN 8/22/14 1801	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	OO-FP-002-082214 WATER COLLECTED FROM DRAINAGE PIPE DISCHARGING DIRECTLY TO THE CANAL 8/22/14 1805	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	OO-FP-003-082214 OIL / WATER MIXTURE COLLECTED FROM GRAVEL BETWEEN RETENTION BASIN AND SHEET PILING 8/22/14 1812	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	OO-FP-004-082214 OIL / WATER MIXTURE COLLECTED FROM TOP OF RETENTION BASIN (WEATHERED) 8/22/14 1817	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	OO-FP-005-082214 OIL / WATER MIXTURE COLLECTED FROM LEADING EDGE OF NEW / BLACK OIL ENTERING THE RETENTION BASIN 8/22/14 1822	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6	OO-FP-007-082214 WATER COLLECTED FROM DRAINAGE DITCH ADJACENT TO THE AREA OF RELEASE 8/22/14 1830	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7	O-FP-008-082214 UPSTREAM SAMPLE COLLECTED IN THE CANAL, APPROXIMATELY 60 YARDS UPSTREAM OF RELEASE 8/22/14 1857	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8	OO-FP-009-082214 RAINWATER / GROUNDWATER RUNOFF COLLECTED ADJACENT TO 5000 W 41ST. STREET 8/22/14 1842	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>
10		<input type="checkbox"/>	<input type="checkbox"/>
<b>Remarks:</b> Samples 2, 6, 7, and 8 designated as "Spill" for comparison purposes only.			

**Samples checked in by:** MST2 BRIAN MESSING

**Date:** 26 Aug 14

**Sample Custodian:** MST1 ALEXANDER SHUNDA

**Date:** 27 Aug 14

**Supervisor of Analysis:** K. JUAIRE

**Date:** 28 Aug 14